

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the present application.

Listing of Claims:

1. (Currently Amended) A process of separating/purifying separating or purifying 1,1,1,3,3-pentafluoropropane in which a mixture comprising at least 1,1,1,3,3-pentafluoropropane and hydrogen fluoride is subjected to a distillation step so that a distillate is obtained which comprises an azeotropic mixture consisting essentially of 1,1,1,3,3-pentafluoropropane and hydrogen fluoride, wherein under a pressure in a range of 2.95 kg/cm²-gauge to 9.60 kg/cm²-gauge, the azeotropic mixture has a temperature of 40°C to 80°C; and a bottom product is obtained which comprises 1,1,1,3,3-pentafluoropropane substantially free from hydrogen fluoride.

2. (Currently Amended) A process of separating/purifying separating or purifying hydrogen fluoride in which a mixture comprising at least 1,1,1,3,3-pentafluoropropane and hydrogen fluoride is subjected to a distillation step so that a distillate is obtained which comprises an azeotropic mixture consisting essentially of 1,1,1,3,3-pentafluoropropane and hydrogen fluoride, wherein under a pressure in a range of 2.95 kg/cm²-gauge to 9.60 kg/cm²-gauge, the

azeotropic mixture has a temperature of 40°C to 80°C, and a bottom product is obtained which comprises hydrogen fluoride substantially free from 1,1,1,3,3-pentafluoropropane.

3. (Currently Amended) A process of treating a feed mixture comprising at least 1,1,1,3,3-pentafluoropropane and hydrogen fluoride, which process comprises the steps of:

subjecting the feed mixture to a first distillation stage, whereby

a first distillate is obtained which comprises an azeotropic mixture consisting essentially of 1,1,1,3,3-pentafluoropropane and hydrogen fluoride, wherein under a pressure in a range of 2.95 kg/cm²-gauge to 9.60 kg/cm²-gauge, the azeotropic mixture of the first distillate has a temperature of 40°C to 80°C, and

a first bottom product is obtained which comprises 1,1,1,3,3-pentafluoropropane substantially free from hydrogen fluoride when a 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the feed mixture is larger than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate, or a first bottom product is obtained which comprises hydrogen fluoride substantially free from 1,1,1,3,3-pentafluoropropane when the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the feed mixture is

Appl. No. 09/964,364

Art Unit 1764

December 4, 2003

Reply to Office Action of July 8, 2003

smaller than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate, and

subjecting the first distillate to a second distillation stage which is operated at a pressure which is different from that of the first distillation stage, whereby

a second distillate is obtained which comprises an azeotropic mixture consisting essentially of 1,1,1,3,33-pentafluoropropane and hydrogen fluoride, wherein under a pressure in a range of 2.95 kg/cm²-gauge to 9.60 kg/cm²-gauge, the azeotropic mixture of the second distillate has a temperature of 40°C to 80°C, and

a second bottom product is obtained which comprises 1,1,1,3,3-pentafluoropropane substantially free from hydrogen fluoride when the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate is larger than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate, or a second bottom product is obtained which comprises hydrogen fluoride substantially free from 1,1,1,3,3-pentafluoropropane when the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate is smaller than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate.

4. (Currently Amended) The process according to claim 3, wherein the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the feed

Appl. No. 09/964,364

Art Unit 1764

December 4, 2003

Reply to Office Action of July 8, 2003

mixture is larger than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate and also larger than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate, and the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate is smaller than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate.

5. (Currently Amended) The process according to claim 3, wherein the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the feed mixture is smaller than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate and also smaller than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate, and the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate is larger than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate.

6. (Currently Amended) The process according to claim 3, wherein the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the feed mixture is between the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate and the R-1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate, and the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the

Art Unit 1764

December 4, 2003

Reply to Office Action of July 8, 2003

first distillate is larger than the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate.

7. (Currently Amended) The process according to claim 3, wherein the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the feed mixture is between the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate and the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate, and the 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the first distillate is smaller than the R-245fa/HF 1,1,1,3,3-pentafluoropropane/hydrogen fluoride ratio of the second distillate.

8. (Currently Amended) The process according to claim 4, wherein the first distillation stage is operated at a pressure in the range between 1 kg/cm²-G and 4 kg/cm²-G or in the range between 8 kg/cm²-G and 20 kg/cm²-G, and the second distillation stage is operated at a pressure in the range between 4 kg/cm²-G and 8 kg/cm²-G.

9. (Currently Amended) The process according to claim 5, wherein the first distillation stage is operated at a pressure in the range between 4 kg/cm²-G and 8 kg/cm²-G, and the second distillation stage is operated at a pressure in the range between 1 kg/cm²-G and 4 kg/cm²-G or in the range between 8 kg/cm²-G and 20 kg/cm²-G.

10. (**Currently Amended**) The process according to claim 6,
wherein the first distillation stage is operated at a pressure in the
range between 4 kg/cm²-G and 8 kg/cm²-G, and the second distillation
stage is operated at a pressure in the range between 1 kg/cm²-G and 4
kg/cm²-G or in the range between 8 kg/cm²-G and 20 kg/cm²-G.

11. (**Currently Amended**) The process according to claim 7, the
first distillation stage is operated at a pressure in the range
between 1 kg/cm²-G and 4 kg/cm²-G or in the range between 8 kg/cm²-G
and 20 kg/cm²-G, and the second distillation stage is operated at a
pressure in the range between 4 kg/cm²-G and 8 kg/cm²-G.

12. (**Canceled**)